REMARKS/ARGUMENTS

Claims 21-23 are objected to because they invoke Section 112, paragraph 6, having means plus function, on the grounds that the independent claim that they depend from does not invoke Section 112, paragraph 6. Claims 1 and 5-22 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,593,406 to Stone. These rejections and objections are respectfully traversed.

In regards to the objection to claims 21-23, the Applicants do not believe that a legitmate basis for the objection has been provided by the Examiner. The Examiner does not cite any legal basis for the assertion that dependent claims that invoke 35 U.S.C. 112(6) must depend from an independent claim that invokes 35 U.S.C. 112(6), and the Applicants are aware of no such requirement. Clarification is respectfully requested, in particular, the legal authority that the Examiner is relying on for the assertion that the independent claim must include means plus function limitations.

In regards to the rejection of claims 1 and 5-22 under 35 U.S.C. 102(b) as being anticipated by Stone, the Applicants first note that the Examiner has not addressed claims 21 or 22 in that rejection. As previously noted, the Examiner must identify where the structure corresponding to the claimed means plus function limitation can be found in the cited reference in order to support any rejection of claims 21-23. As no discussion of claims 21-22 has been provided by the Examiner in rejecting those claims under 35 U.S.C. 102(b) as being anticipated by Stone, additional support for the rejection or clarification of whether those claims are considered to be rejected is respectfully requested.

In regards to the rejection of claim 1, that claim includes an "inspection system comprising: a rotating prism having a first end and a second end, where the first end receives a first image area and rotates about a center point so as to cover a field of view area that is larger than the first image area, and the second end remains centered on the center point and provides the first image to a view area that has constant dimensions; and an image data system disposed at the second end of the rotating prism, the image data system generating image data as the prism rotates so as to generate two or more sets of image data from the field of view area." In contrast, Stone discloses a system for ascertaining the center or an object whose shape and approximate location are known, and does not disclose an inspection system. While stone does disclose a dove prism 84 image rotator, that dove prism 84 is not a rotating prism having a first end and a

second end, where the first end receives a first image area and rotates about a center point so as to cover a field of view area that is larger than the first image area, and the second end remains centered on the center point and provides the first image to a view area that has constant dimensions. Instead, dove prism 84 is used to increase the effective rate of rotation of servo system 64. While dove prism 84 can be rotated by servo system 62, it is rotated around the center of servo system 62, such that both of the first end and second end of dove prism 84 are rotated around a center point of mounting table 82. As such, dove prism 84 does not have a first end that receives a first image area and rotates about a center point so as to cover a field of view area that is larger than the first image area, and a second end that remains centered on the center point and provides the first image to a view area that has constant dimensions. It is the servo system 64 that rotates specimen holder 78, and angle alpha associated with dove prism 84 is related by a fixed ratio to the rotation angle phi caused by the rotation of servo system 64. Dove prism 84 remains stationary relative to the axis of rotation of servo system 64, unless it is moved in the direction of angle theta by servo system 62, or in the direction R by servo system 60, neither of which rotate a first end of dove prism 84 about a center point while keeping a second end of dove prism 84 centered on a center point.

Likewise, Stone fails to disclose an image data system disposed at the second end of the rotating prism, the image data system generating image data as the prism rotates so as to generate two or more sets of image data from the field of view area. Instead, Stone utilizes sums of pixel values from four quadrants, where the pixels are either valued at zero (if black) or one (if white). As such, Stone reduces a set of image data to a single value, and does not generate two or more sets of image data, only four scalar values representative of the number of white pixels in each quadrant. Based on these values, decisions are made to move servo system 60, 62 or 64, so as to center a primitive or fundamental object whose shape and approximate location are known.

In regards to claim 5, Stone fails to disclose a quadrant inspection system coupled to the image data system, the quadrant inspection system receiving image data from one of four quadrants of the field of view area. The quadrant data generated by Stone is a scalar number representing the number of white pixels in the quadrant, and that data Is not provided to a quadrant inspection system but rather to a system for centering a primitive or fundamental object whose shape and approximate location are known.

In regards to claim 6, Stone fails to disclose a prism rotation controller coupled to the rotating prism, the prism rotation controller setting the rotation speed of the prism. As previously discussed, the servo systems 62 and 64 only control an angle of rotation, not a speed of rotation. Rotation speed is unimportant to the system of Stone, which is only concerned with rotation accuracy so as to center a primitive or fundamental object whose shape and approximate location are known.

In regards to claim 7, Stone fails to disclose an image data acquisition control coupled to the image data system, the image data acquisition control setting an image capture rate. As previously discussed, Stone discloses a system for centering a primitive or fundamental object whose shape and approximate location are known – no image data is generated (presumably) until the object is centered. As such, the image capture rate is a function of how long it takes to center the object, and cannot be controlled but rather is a random variable that depends on the length of time that it takes the centering algorithm of Stone to center the object.

In regards to claim 8, Stone fails to disclose a quadrant data analysis system receiving the image data and generating die quadrant inspection pass/fail data. As previously discussed, Stone simply generates a scalar number representative of the number of white pixels, which is not inspection pass/fail data. As Stone is only concerned with centering the image of an object, there is simply no inspection pass/fail data generated by Stone.

In regards to claim 9, Stone fails to disclose a die identification system receiving the image data and generating die image data. The section of Stone cited by the Examiner merely defines the requirements for the component that is being inspected, namely, that the object must be such that it yields a uniformly dark shadow on a uniformly bright bright-field, so as to allow values of zero and one to be assigned to black and white pixels, respectively.

In regards to claim 10, Stone fails to disclose a component identification system receiving the image data and generating component identification data. As discussed, Stone simply discloses a system for centering an object, and does not include a component identification system that generates component identification data. In order for the system of Stone to function, the identification of the component must already be known, and is used to allow the system of Stone to center the component or object.

In regards to claim 11, Stone fails to disclose a component inspection system receiving the image data and generating component pass/fail data. As previously discussed, the system of

Stone simply centers an object, and does not perform any inspection. The sections of Stone relied on by the Examiner merely discuss this centering process, and do not disclose any type of inspection.

Claim 12 includes a method for inspection comprising: receiving image data of a first area from a prism; generating first area image data; rotating the prism; receiving image data of a second area from the prism; generating second area image data. The Examiner merely refers to the rejection of claim 1 for support for the rejection of claim 12, but as discussed, the dove prism 84 of Stone does not rotate. While the table 82 is rotated by servo system 62, dove prism 84 is only moved laterally – it is not rotated. Likewise, dove prism 84 remains fixed relative to the rotation of specimen holder 78 by servo system 64.

Claim 13 includes the method of claim 12 further comprising: receiving image data of a third area from the prism; generating third area image data; rotating the prism; receiving image data of a fourth area from the prism; generating fourth area image data; and wherein an item is inspected using the first area image data, the second area image data, the third area image data, and the fourth area image data. The four quadrants of Stone are not four image data areas that are used to inspect an item; rather, they are used to calculate a scalar representing the number of white pixels so a primitive object can be centered.

Claim 15 includes the method of claim 13 wherein the first area image data corresponds to a first quadrant of a semiconductor die, the second area image data corresponds to a second quadrant of the semiconductor die, the third area image data corresponds to a third quadrant of the semiconductor die, and a fourth area image data corresponds to a fourth quadrant of the semiconductor die. As discussed, Stone fails to disclose an inspection system, and only discloses a system for centering a primitive or fundamental object, and does not disclose any type of inspection of image data, much less that the first area image data corresponds to a first quadrant of a semiconductor die, the second area image data corresponds to a second quadrant of the semiconductor die, the third area image data corresponds to a third quadrant of the semiconductor die, and the fourth area image data corresponds to a fourth quadrant of the semiconductor die. The Examiner has misconstrued the quadrants of Stone – they are merely artifices that show how the off-centered object will generate scalar pixel values for the number of white pixels that are not equal.

Claim 16 includes a method for inspecting a semiconductor die comprising: receiving image data of a first area from a prism; generating first area image data that includes a first section of the semiconductor die; rotating the prism; receiving image data of a second area from the prism; generating second area image data that includes a second section of the semiconductor die. The Examiner merely refers to the rejection of claims 1 and 15 for support for the rejection of claim 16, but as discussed, the dove prism 84 of Stone does not rotate. While the table 82 is rotated by servo system 62, dove prism 84 is only moved laterally – it is not rotated. Likewise, dove prism 84 remains fixed relative to the rotation of specimen holder 78 by servo system 64.

Claim 17 includes the method of claim 16 wherein the first section and the second section are each quadrants of the semiconductor die, and the prism is further rotated to generate image data of all four quadrants of the semiconductor die. The Examiner again merely refers to the rejection of claims 1 and 15 for support for the rejection of claim 17, but as discussed, Stone fails to disclose rotation of the dove prism 84 to generate image data of all four quadrants of the semiconductor die. Instead, Stone discloses that a scalar value representing the number of white pixels is generated for each of four quadrants, and then a decision is made whether to move the camera laterally, or whether to rotate the specimen holder 78. To dove prism 84 of Stone is not rotated in the manner claimed in claim 17.

Claim 18 includes the method of claim 16 further comprising rotating the second area image data to align with the first area image data. Claim 19 includes the method of claim 18 further comprising eliminating overlapping sections of the image data. While the Examiner cites to sections of Stone as allegedly disclosing these steps, there is simply no way for the system of Stone to perform these steps – the four quadrants of Stone are already aligned, such that elimination of overlapping sections in not required. As previously discussed, Stone only generates a scalar number representing the number of white pixels in each area, and uses that number to determine whether an object is centered.

Claim 20 includes the method of claim 16 further comprising analyzing the second area image data based on a predetermined angular relationship to the first area image data. As discussed, the system of Stone simply does not analyze any image data, much less based on a predetermined angular relationship to other image data – it only centers an object based on scalar values representing the number of white pixels in each of four quadrants.

Claim 21 includes the system of claim 1 wherein the image data system comprises means for generating two or more pixel arrays of image data from a rotating prism within a field of view. Claim 22 includes the system of claim 1 further comprising means for identifying component edges from image data generated by the rotating prism. Claim 23 includes the system of claim 1 further comprising means for setting an image capture rate using a prism rotation speed. As previously discussed, there is no discussion of the basis for the rejection of claims 21 or 22 over Stone, and that rejection appears to have been a typographical error. Stone utterly fails to disclose any structure corresponding to the structure in the specification related to these means plus function claim limitations.

As discussed, Stone fails to disclose each element of claims 1 and 5-23, and withdrawal of the rejection and allowance of the claims is respectfully requested.

CONCLUSION

In view of the foregoing remarks and for various other reasons readily apparent, Applicants submit that all of the claims now present are allowable, and withdrawal of the rejection and a Notice of Allowance are courteously solicited.

If any impediment to the allowance of the claims remains after consideration of this amendment, a telephone interview with the Examiner is hereby requested by the undersigned at (214) 953-5990 so that such issues may be resolved as expeditiously as possible.

No fees are believed to be due at this time. In particular, it is noted that the time set for responding to the office action was three (3) months, such that this response is timely filed within the no-fee response period. However, if any applicable fee or refund has been overlooked, the Commissioner is hereby authorized to charge any fee or credit any refund to the deposit account of Jackson Walker L.L.P., No. 10-0096.

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Respectfully submitted,

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